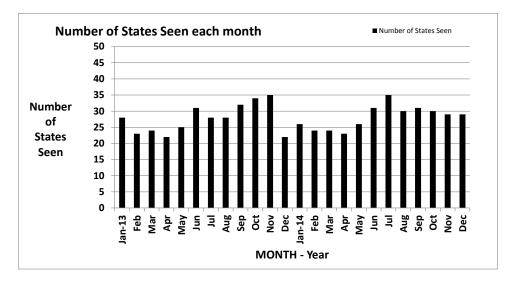
The License Plate Game at Fermilab

We are all familiar with the array of flags in front of Wilson Hall indicating those countries represented at Fermilab. Former House Speaker Tip O'Neil once said, "All politics is local". Is there some way to indicate "local" participation at Fermilab from around the United States? Our contracting organization FRA has members from 35 states, but how many of them actually work here? And how often are they here?

Over the last few years I've noticed more and more cars with out-of-state license plates as I walk in from the far reaches of the Fermilab parking lots to Wilson Hall. This inspired me to play the license plate game during these walks – you may have played the game as a child or kept your child occupied on a long trip with the game. The idea is to keep track of license plates seen in a particular period of time. In this case the period of time is the walk through the parking lot every day where I typically walk past 200 – 400 cars depending on where I park.

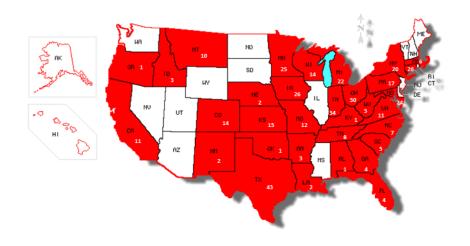
Each month I total up the number of states seen and typically see 20 -35 out-of-state plates. The distribution by month over calendar 2012 and 2013 is shown below. There is something of a summer/winter effect with more plates collected in the summers.



"Collecting" states by month doesn't really convey how many out-of state cars there are at Fermilab every day. During July 2013 a total of 408 out-of-state cars were seen – that's about 19.4 cars per day on the 21 working days that month. During November 2013 a total of 231 out-of-state cars were seen – that's about 12.1 cars per day on the 19 working days that month. In each case the same car may be counted multiple times if seen on separate days. The distribution of states in those months is shown in the graphics below where the white number in each state is the total number cardays that state's plate was seen. It is striking that people drive their cars here from all points in the United States. More cars are from nearby states than from those far away, and more cars are from populous states than smaller states.

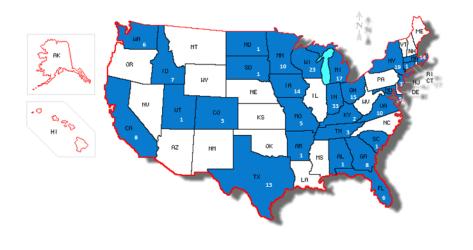
July 2013

408 out of state plates seen on separate days 35 <u>different</u> states seen



November 2013

231 out of state plates seen on separate days 29 different states seen



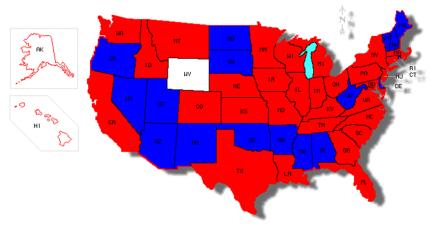
Looking more closely at the above pictures, you can see that different states appear in different months. Montana was here in July but not in November. Washington was here in November but not in July. That leads to another picture that integrates the states seen over the entire two year period. Over all 24 months, a total of 47 of the 50 states plus the District of Columbia were seen. This is much larger than the number of institutions in FRA. I think this demonstrates that Fermilab is a truly a "national" laboratory, serving people from the entire country. Perhaps this is useful in discussions with DOE and Congress, since "all politics is local"?

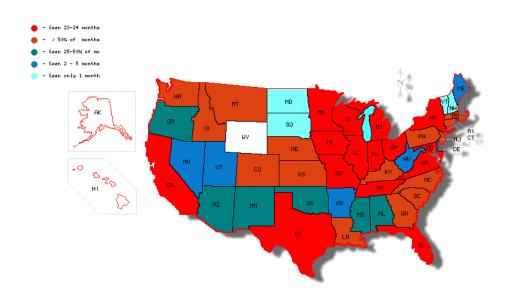
The 24 month total is displayed below in two ways. First, in Red, White and Blue are those states seen in 12 or more of the 24 months (red), those seen in 1-11 of the 24 months (blue), and those not seen at all (white). The second picture uses more gradations of red and bluish but is perhaps harder to understand.

Red: States seen at Fermilab in 12 or more of 24 months

White: States not seen

Blue: States seen at Fermilab in 1 – 11 of 24 months





It is of course possible for Fermilab users to fly to Chicago and rent an out-of-state car for the drive from the airport to Fermilab. Personal cars tend to be older models, have more junk inside the car, have bumper stickers or parking stickers or IPASS devices. Rental cars are newer, cleaner and have several bar codes on the windows for rapid check-in. These two populations are fairly easy to distinguish. In November 2013 twenty-nine rental cars were spotted in addition to the 231 shown in the November 2013 graphic above. This background has no effect on the plots where one is looking for at least one sighting of a particular state each month or year.